



IR-03 Pilot Study Update

BCT Meeting
Hunters Point Naval Shipyard

June 5, 2014

Location: HPNS IR03



HPNS IR03 – Overview



•Nonaqueous phase liquid (NAPL) Treatment Pilot Study (NTPS):

Activity	Schedule
In Situ Thermal Remediation (ISTR) Operation	February 4 – July 7, 2014
ISTR Performance Soil and Groundwater Sampling	July 8-13, 2014
In Situ Solidification/Stabilization (ISS) Design – Draft to BCT	April 25, 2014
BCT Review ISS Design and Submit Comments	May 31, 2014
Submit RTCs	June 6, 2014
Submit Final ISS Design and Begin ISS Mixing Pilot	June 16, 2014

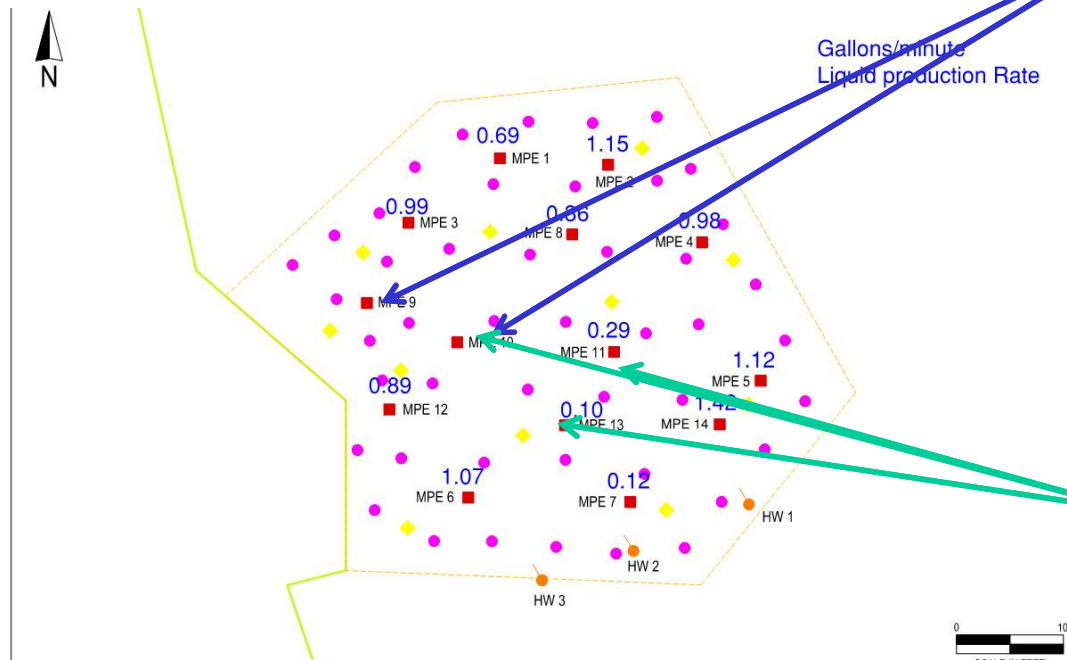
Observations Reported Since the Last BCT Meeting



- Last BCT Meeting, discussed as of 3/18/2014 (41 days of operation)
 - 324,000 gallons of water recirculated (~2.2 pore volumes)
 - 1,200 gallons of NAPL had been extracted
 - Did not report ~300 gallons obtained from NAPL separator when swapped
- As of 5/26/2014 (110 days of operation):
 - 635,000 gallons of water have been recirculated (~4.2 pore volumes)
 - 2,336 gallons of NAPL have been extracted
- Operations continue with temperatures typically 95-100+ °C

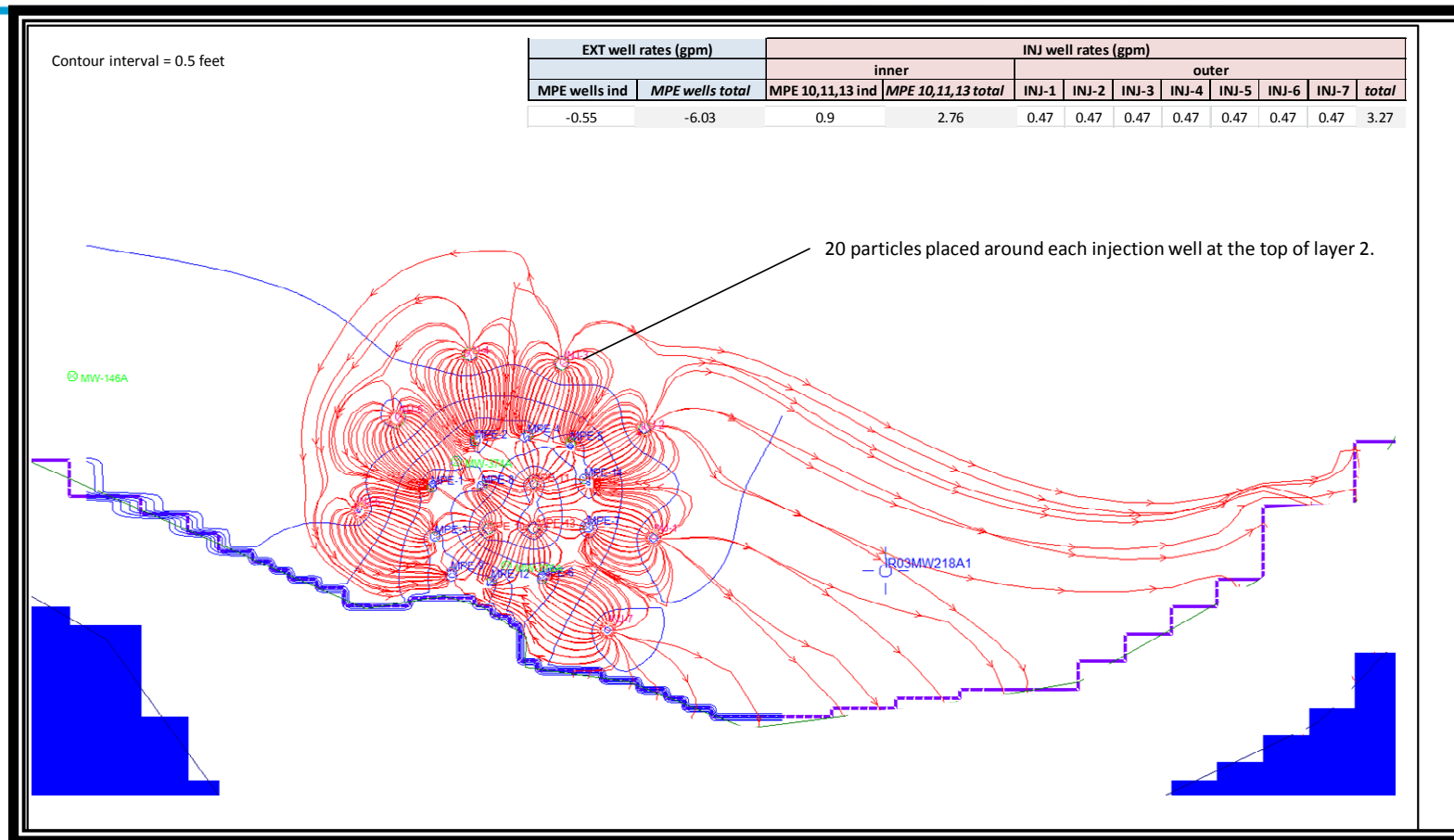


Hydraulic Control:



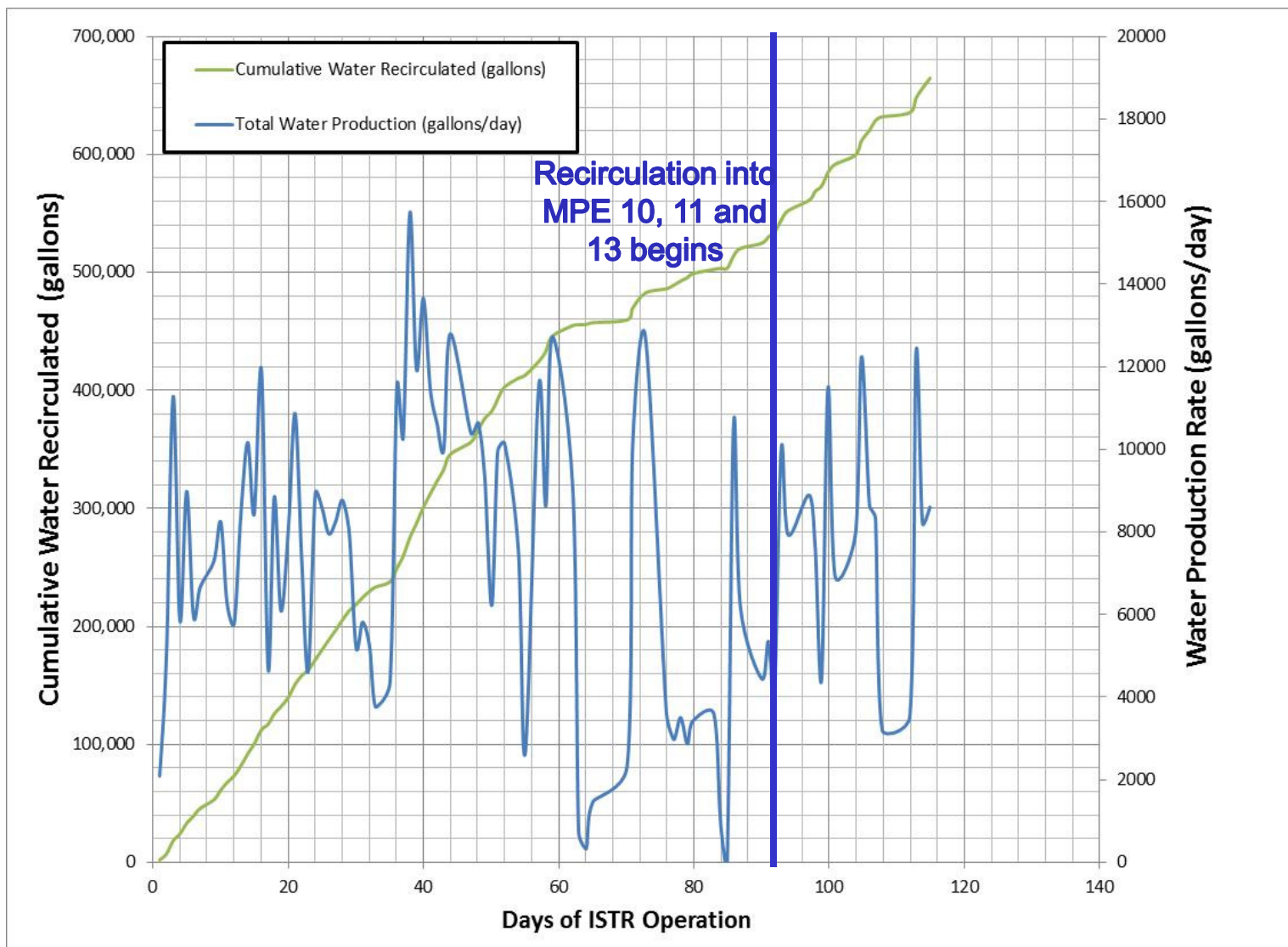
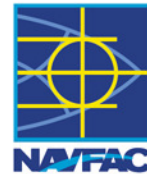
- Well MPE 9 and 10 were dry in April 2014.
- Turned off exterior MPE points April 10th to try and flush water through the interior of the system, but heating rate was too high and the system was dewatered further.
- Implemented recirculation where MPE 10, 11 and 13 were converted to injection wells.

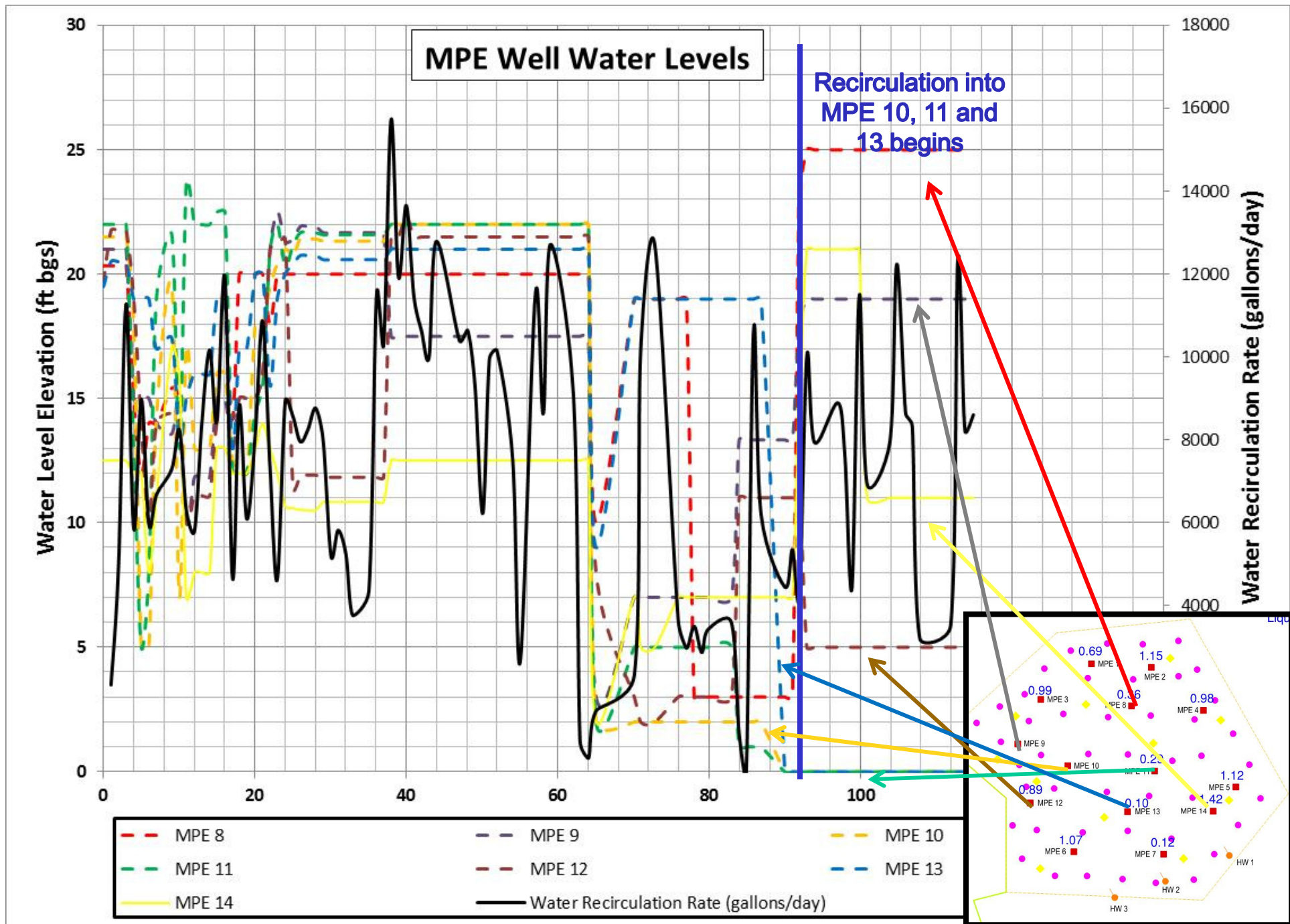
Modified Recirculation: Modeling Groundwater Flow Paths



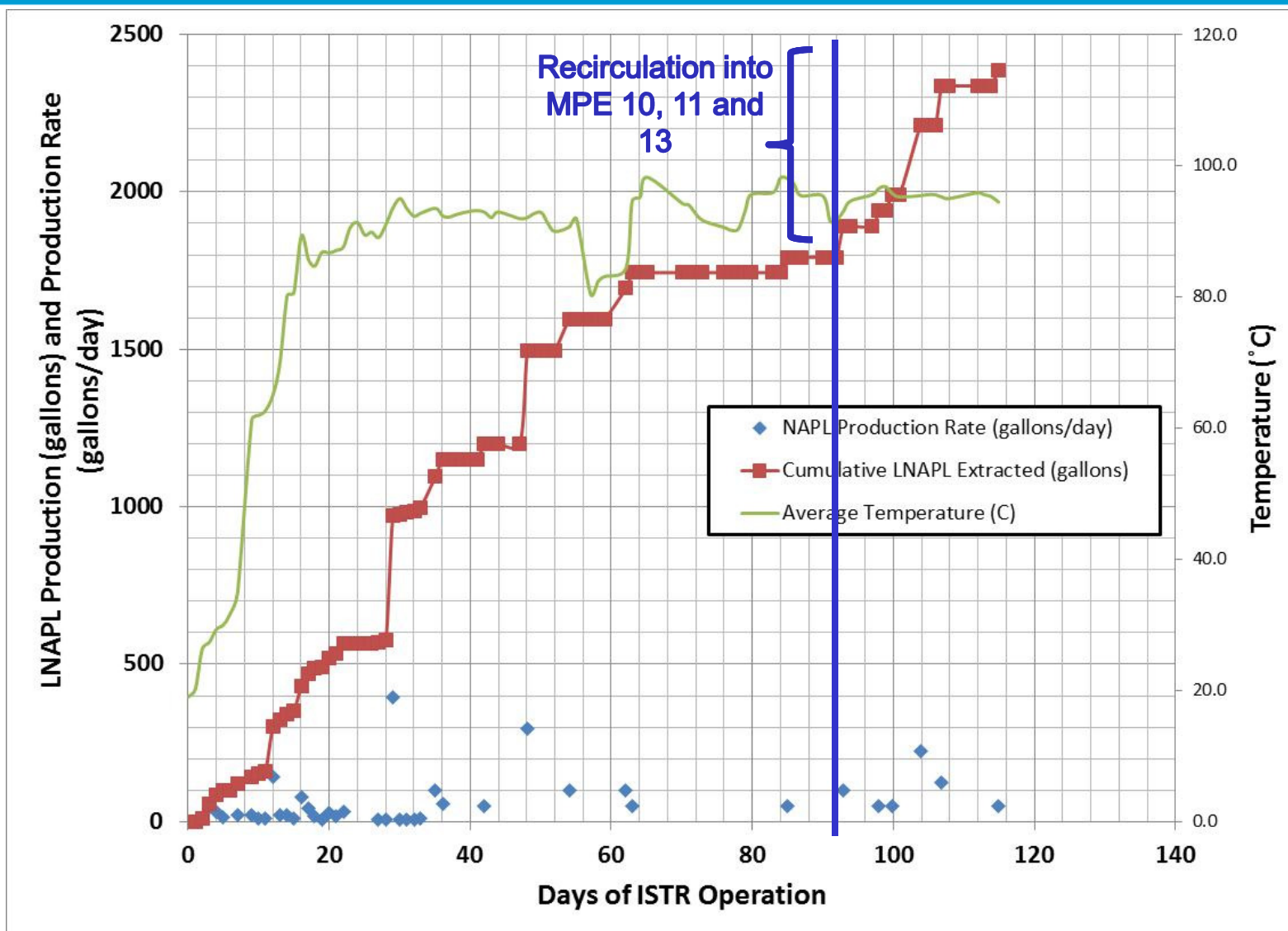
**MPE Wells 10, 11 and 13 were modified as reinjection wells- reinjection rates of 1-4 gpm.
INJ1-7 wells have sustained reinjection rates of 1-5 gpm.**

ISTR Operation: Recirculation System Volumes and Rates

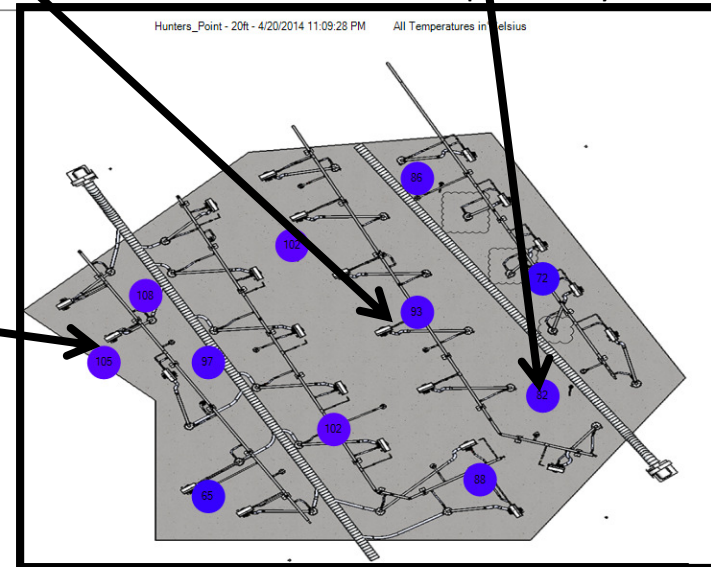
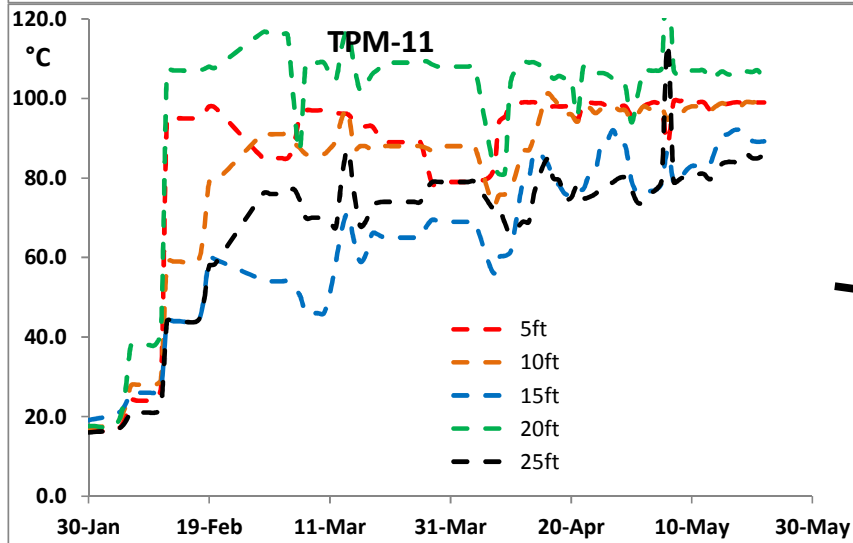
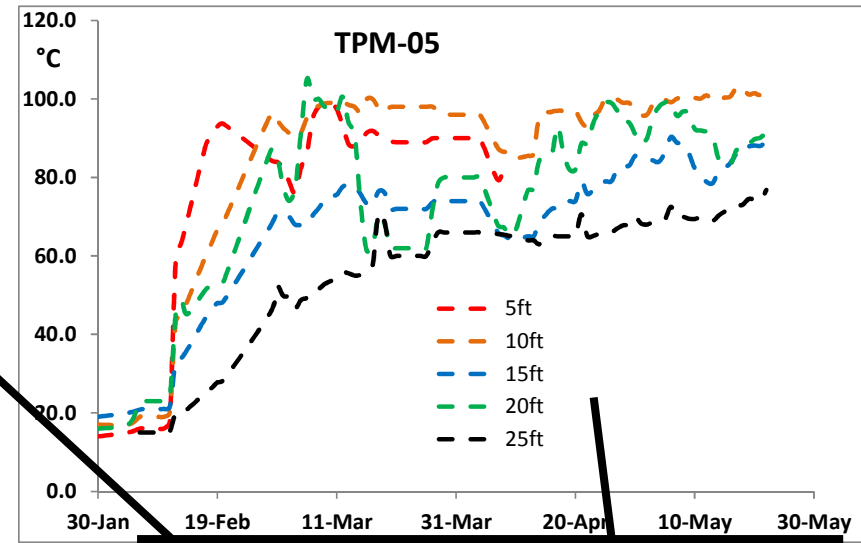
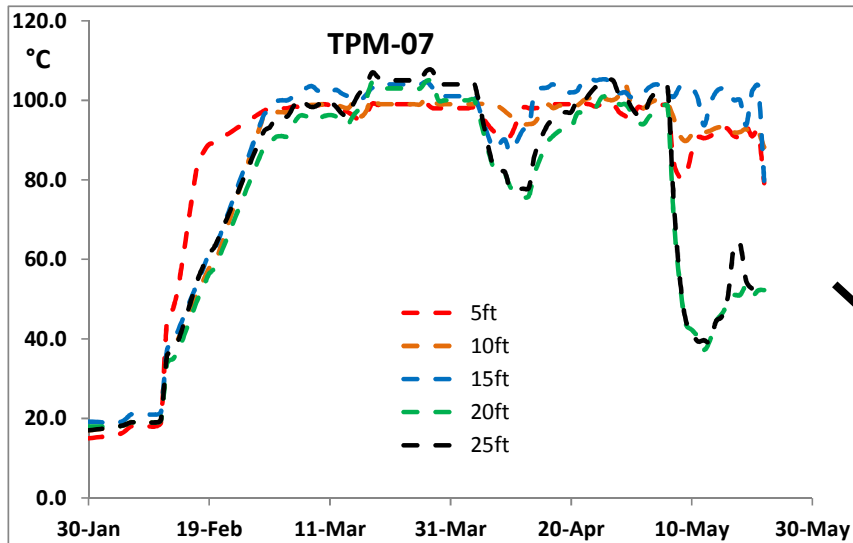




ISTR System Operation: NAPL Removal



Temperatures in Treatment System



Summary



• ISTR:

- Continue “dual” recirculation with reinjection into MPE 10, 11 and 13 along with INJ 1-7.
- Reinjection rates vary depending on yield of MPE wells, and adjusted, as possible.
 - Initially recirculated up to 16,000 gallons/day
 - Operations have generally been conducted at 4,000-12,000 gallons/day
- Operations are planned to continue for an additional month

• ISS:

- Mobilization scheduled June 16



